

**Fedorov, E. E.—Continued.**

Nekotorye rezul'taty ezhechesnikh otchetov oblachnosti v Slutsk (Pavlovsk). (Some results of hourly observations of cloudiness in Slutsk.) p. 157-164. figs. 30 $\frac{1}{2}$  cm. [Russian text, with English abstract.]

Opyt izuchenija pogody mesjatsa po pogodam otdelnykh dnei. Pogody tepliykh fanvarej po nabludenijam v Slutsk (Pavlovsk). (An attempt of studying the monthly weather by means of considering the weather conditions of each separate day. Warm Januaries at Pavlovsk (Slutsk).) [With English abstract.] [Text in Russian.]

**Findiklis, Theoklitos Th.**

Normal hourly and the true monthly temperature of the air of Athens and their variability. 7 p. 25 $\frac{1}{2}$  cm. (Extr.: Praktika acad. d'Athènes, v. 2, 1927.) [Text in Greek.]

**Franze, Bruno.**

Die Niederschlagsverhältnisse in Südamerika. Gotha. 1927. viii, 79 p. map (fold.) 27 $\frac{1}{2}$  cm. (Ergänzungsheft Nr. 193 zu "Petermanns Mitteil.")

**Good roads machinery co.**

Hand book of snow removal. Ed. 2. Kennett Square. c1926. 71 p. illus. tables (fold.) 20 $\frac{1}{2}$  cm.

**Groissmayr, F.**

Langfristige Wetterprognose. p. 489-492. 25 $\frac{1}{2}$  cm. (Sonderdr. Die Erde. Bd. 3, H. 8/9, 1925.)

**Hergesell, H.**

Die Arbeiten der Kommission zur Erforschung der Schallausbreitung in der Atmosphäre vom Mai 1923 bis Ende Oktober 1926. Lindenberg. 1927. 20 p. figs. plate. 22 $\frac{1}{2}$  cm. (Forschungsarbeiten über Sprengungen mit Unterstützung der Notgemeinschaft der deutschen Wissenschaft.)

**Hoxmark, Guillermo.**

Infuencia de las condiciones climáticas sobre el rendimiento de la lana. Buenos Aires. 1927. 25 p. figs. 23 cm. (Rep. Argen. Min. agric. Soc. prop. e inform. No. 716. Agosto 1927.)

**Johannesburg. Municipality & South African railways and harbors administration.**

Johannesburg, Transvaal. A sunshine city built on gold. [Johannesburg.] 1926. 123 p. illus. map (fold.) 18 $\frac{1}{2}$  cm. [Climate, p. 57-61.]

**Johnson, N. K., & Davies, E. L.**

Some measurements of temperatures near the surface in various kinds of soils. p. 45-59. figs. 25 cm. (Quart. journ. Roy. met. soc. v. 53, Jan., 1927.)

**Livathinos, A. N.**

Sur la relation qui existe entre l'insolation et la nébulosité. 6 p. 26 cm. (Extr.: Compt. rend. Acad. d'Athènes, v. 2, 1926.) [Text in Greek, French trans.]

**Lwów. Université. Institut de géophysique et de météorologie.**

Communications. v. 2. Nos. 19 à 30 des résultats des recherches de Henryk Arctowski et de ses collaborateurs . . . faites à la Société des naturalistes polonais et publiées dans la revue "Kosmos": v. 51 et 52. 1926-1927. n. p. n. d. v. p. figs. 23 $\frac{1}{2}$  cm. [Polish text: French abstract.]

**McClelland, C. K.**

Effect of different dates of planting corn on yields. 14 p. fig. 23 cm. (Univ. Ark. Coll. agric. Agric. exper. sta. Bull. no. 222. Aug. 1927.)

**Minami, Toraiiro, & Hukumoto, Yosisige.**

On the distribution of the mixing ratio of aqueous vapour in atmospheric air near the earth's surface. p. 339-345. figs. 26 $\frac{1}{2}$  cm. (Journ. Fac. sci., Imp. univ. Tokyo. Sec. 1. Math., astron., phys., chem. v. 1, pt. 8, 1927.)

**Nakaya, Ukitaro.**

Monthly normals of isobars in Japan at the height of 3,000 meters. p. 301-311. plates. 26 $\frac{1}{2}$  cm. (Journ. Fac. sci. Imp. univ. Tokyo. Sec. 1. Math., astron., physics, chem., v. 1, pt. 8, 1927.)

**Östman, C. J.**

Studier över nederbördens fördelning vid olika vindar i Svealand och Götaland. Distribution des pluies suivant les vents dans les provinces de Svealand et de Götaland. Stockholm. 1927. 30 p. figs. 31 $\frac{1}{2}$  cm. (Medd. från Stat. met-hydrog. anstalt. Bd. 4, n:o 2.)

**Oxford university. Institute of agricultural engineering.**

Report on the use of windmills for the generation of electricity. Oxford. 1926. 63 p. figs. plates. 25 cm. (Bulletin no. 1.)

**Paris. Université. Institut de physique du globe.**

Annales de l'Institut de physique du globe de l'Université de Paris et du Bureau central de magnétisme terrestre. T. 5. Paris. 1927. 129 p. figs. plate (fold.) 31 $\frac{1}{2}$  cm.

**Ramsey, L. C., & Kincaid, E. H.**

Analysis of recent trans-Atlantic flights. p. 986-999. figs. 24 $\frac{1}{2}$  cm. (Repr.: U.S. Naval inst. proc. v. 53, no. 9, Sept., 1927.)

**Rubio, Emilio F.**

Antorchas para producir humo contra las heladas tardías, manera de prepararlas. unp. illus. 23 $\frac{1}{2}$  cm. (Rép. Argen. Min. agric. Sec. prop. e informes. Buenos Aires. No. 717. Agosto 1927.)

**Schlutz, Herbert.**

Hilfsmittel für den Unterricht in der Witterungskunde. 3 p. plate. 30 cm. (Pflug und Buch. Nr. 11, 1927.)

**Schuylar, P. K.**

Wind velocities in United States from long-time records. A compilation of maximum Weather bureau records corrected to true wind velocities as guide to designers. p. 352-353. figs. 30 $\frac{1}{2}$  cm. (Engin. news-rec. v. 99, no. 9, Sept. 1, 1927.)

**Silvester, Norman L.**

Use of barometric charts in the navigation of arships. p. 60-80. figs. 25 cm. (Journ. Roy. aeron. soc., v. 31, Jan., 1927.)

**Sinoda, Kiiti.**

Monthly normal isobars at 4000 and 6000 metre levels over Japan and its vicinity. p. 313-337. plates. 26 $\frac{1}{2}$  cm. (Journ. Fac. sci., Imp. univ. Tokyo. Sec. 1. Math., astron., physics, chem. v. 1, pt. 8, 1927.)

**South Carolina. Dept. of agric., comm., and industries, & Clemson college.**

South Carolina, a handbook. Columbia. 1927. 346 p. illus. front. map. 24 cm. [Climate. p. 29-33.]

**Sweden. Statens meteorologisk-hydrografiska anstalt.**

Description des stations météorologiques suédoises pouvant figurer aux météoradiogrammes internationaux publiée conformément à la résolution XLI de la conférence des directeurs à Utrecht 1923. Stockholm. 1927. 19 p. figs. 24 $\frac{1}{2}$  cm.

**Teichert, Curt.**

Erdmagnetische Messungen im östlichen Samland. (Weitere Beiträge zum Problem der erdmagnetischen Störungen in Ostpreussen.) p. 66-95. figs. 25 $\frac{1}{2}$  cm. (Sonder-Abdr.: "Schriften der Phys.-ökonom. Gesellsch. zu Königsberg i. Pr." 65. Bd. 1. H. 1926.)

**Theaman, John R.**

Precipitation of Antigua, (British West Indies.) Indianapolis. 1927. 2 p. tables. charts. 28 $\frac{1}{2}$  cm. (Climatological paper no. 32.) [Typewritten.]

**Union of South Africa. Administration of railways and harbours.**

Union of South Africa, a résumé. Johannesburg. 1927. 55 p. maps. 21 cm. [Climate, p. 13-18.]

**U. S. Bureau of public roads. Div. construction.**

Snow removal winter 1925-1926. A digest of snow removal and snow problems compiled from data collected from highway officials over the snow area of the United States by the snow removal section of the division of construction. 40 p. plates (part fold.) 27 cm. [Manifolded.]

**U. S. Naval aircraft factory. Physical laboratory.**

Electrical precipitation of fog over landing fields. Philadelphia. 1927. 16 p. (incl. plates.) 29 $\frac{1}{2}$  cm. (Navy dept. Bur. aeron. Progress report. Ser. no. 6301-A. Sept. 17, 1927.) [Manifolded.]

**Winchester, Lily.**

Among the high Alps. A climate study. p. 425-429. fig. 24 $\frac{1}{2}$  cm. [Geogr. teacher, v. 12, no. 70, pt. 6, 1924.] [Describes a visit to the Monte Rosa observatories.]

**RECENT PAPERS BEARING ON METEOROLOGY**

The following titles have been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau.

**Aero digest. New York. v. 11. October, 1927.**

Ramsay, Logan C., & Kincaid, Earle H. Analysis of weather conditions on recent transatlantic flights. p. 402-405.

**Akademie der Wissenschaften. Sitzungsberichte. Wien. Abt. IIa. Band 135, Heft 10. 1926.**

Oberguggenberger, Viktor. Über die Szintillation der Fixsterne. p. 627-645.

**American geophysical union. 8th annual meeting. Transactions. Washington, D. C. 1927.**

Abbot, C. G. Sunspots and solar radiation. p. 128-129. [Abstract.]

- American geographical union. 8th annual meeting. *Transactions. Washington, D. C.* 1927—Continued.
- Adams, L. H. The critical extent of polar ice caps. p. 31–32. [Abstract.]
- Aldrich, L. B. The influence of the atmospheric constituents upon climate. p. 19–24.
- Austin, L. W. Radio atmospheric disturbances and solar activities. p. 145–150.
- Bauer, Louis A. Sunspots and magnetic and electric disturbances. p. 129–132.
- Breit, G. A suggestion of a connection between radio fading and small fluctuations in the earth's magnetic field. p. 150–158.
- Buwalda, John P. Pleistocene and recent topographic changes in the Pacific Coast states. p. 39–43.
- Dellinger, J. H. Summary of symposium on correlations of various radio phenomena with solar and terrestrial magnetic and electric activities. p. 192–197.
- Gish, O. H. Possible relations between earth-currents, earth-resistivity, and some radio phenomena.
- Henry, Alfred J. The general circulation of the atmosphere as a climatic control. p. 24–26.
- Hulbert, E. O. Preliminary note on conclusions regarding the constitution of the upper atmosphere indicated by data of radio. p. 125–126.
- Humphreys, W. J. Ozone in the upper air. p. 98–101.
- Jones, Loyd A. Photographic spectrophotometry in the ultra-violet region. p. 109–123.
- Kimball, Herbert H., & Hand, Irving F. Bleaching of methylene-blue-acetone-water by ultra-violet radiation. p. 123–125.
- Kincaid, E. H. Correlation of static with the atmosphere. p. 158–179.
- Littlehales, G. W. The ocean among the factors of the control of climate. p. 26–31.
- McEwen, George F. Recent progress in the dynamical oceanography of the northeastern part of the North Pacific ocean. p. 222–235. [Discusses meteorological relations.]
- Pardee, J. T. Changes in elevation of the Rocky Mountains in Pleistocene time as possible climatic factors. p. 33–35.
- Pettit, Edison. Ultra-violet solar radiation. p. 101–108.
- Pickard, Greenleaf W. The correlation of radio reception with solar activity and terrestrial magnetism—II. p. 133–145.
- Smith, Philip S. Some post-Tertiary changes in Alaska of climatic significance. p. 35–39.
- Winchester, George. Annual variation of the sun's spectrum in the region 3200 to 2900 Ångström units. p. 108–109.
- American society of heating and ventilating engineers. *Journal. New York.* v. 33. October, 1927.
- Moore, George T. The measurement of atmospheric pollution, visible and invisible. p. 595–598.
- Bulletin géophysique. no. 14. Leningrad. 1926.
- Smirnoff, I. V. Snow drifts in artificial snowstorm conditions. p. 20–22. [Abstract.]
- California citograph. Los Angeles. v. 12. October, 1927.
- Young, Floyd D. Windbreaks' effectiveness in So. California orchards. p. 424.
- Ciel et terre, Bruxelles. 42 année. Juillet-août-septembre 1927.
- Dorlodot, Albert de. Météorologie et aviation civile. p. 175–178.
- Nodon, Albert. Les radiations ultrapénétrantes d'origine cosmique. p. 160–171.
- Electrical world. New York. v. 90. October 15, 1927.
- Lusignan, J. T., Jr. Lightning protection for oil reservoirs. p. 775–779.
- Engineering news-record. New York. v. 99. 1927.
- Schuyler, P. K. Wind velocities in United States from long-time records. p. 352–353. (Sept. 1.)
- Knight, W. J. Building destruction in the St. Louis tornado. p. 558–560. (Oct. 6.)
- France. Académie des sciences. *Comptes rendus. Paris.* t. 183. 26 septembre 1927.
- Kohn-Abrest. Diffusion atmosphérique des fumées de Paris. p. 617–620.
- Franklin institute. *Journal. Philadelphia.* v. 204. September, 1927.
- Klemperer, Wolfgang. Soaring flight. p. 293–327.
- Geographical journal. London. v. 70. September 1927.
- Wordie, J. M. The Cambridge expedition to East Greenland in 1926. p. 225–265. [Appendix 4. Weather, by J. Manley, p. 249–252.]
- Great Britain. Meteorological office. *Geophysical memoirs. London.* no. 36. 1927.
- Stagg, J. M. On magnetic fluctuations and sunspot frequency.
- Ibérica. Tortosa, Año 14. 24 septiembre 1927.
- La comisión internacional para la exploración de la alta atmósfera. p. 169.
- Időjárás. Budapest. v. 31. Július-augusztus 1927.
- Marczell, György. Sonnenschein im Gebirg und Tal. p. 124–127; [Abstract.]
- Journal of geophysics and meteorology. Moscow. v. 4. no. 1. 1927.
- Berg, E. J., — Schönrock, A. M. The most notable diurnal maxima of precipitation for the period of 35 years—1881 to 1915—and their geographical distribution in the European part of U. S. S. R. Part II. Frequency of diurnal maxima. p. 75–76. [Abstract.]
- Holtzman, M., & Keller, L. An apparatus measuring atmospheric turbulence. p. 97. [Abstract.]
- Kalitin, N. N. Regarding the illumination of the atmosphere by diffused light. p. 23. [Abstract.]
- Lyr, E. Synoptic conditions of glazed frost in the European part of U. S. S. R. p. 36–38. [Abstract.]
- Wiese, W. Beiträge zur Vorhersage der mittleren monatlichen und jahreszeitlichen Werte meteorologischer Elemente. II. Die mittlere Temperatur im Juli in Leningrad. p. 61–63. [Abstract.]
- Marine observer. London. v. 4. October, 1927.
- Clarke, G. A. Clouds and what they signify. p. 197–199.
- Cresswell, M. The port meteorological office, Liverpool. p. 201–202.
- Meteorological magazine. London. v. 62. September, 1927.
- Andrew, W. I. Ball lightning at Cattewater. p. 186–187.
- Davies, E. I., & Johnson, N. K. The cup anemometer. p. 184–185. [Describes an English 3-cup anemometer.]
- Lamb, C. W. Rain falling through drizzle. p. 189–192.
- Thomas, M. J. The visibility of coloured tails in pilot balloon ascents. p. 179–182.
- Winchester, Lily. The play of the winds. p. 185–186. [Effects of wind on smoke from chimneys.]
- Météorologie. Paris. n. s. t. 3. Juillet 1927.
- Bénévent, E. La trombe de Nice du 1er décembre 1924. p. 308–312.
- Bureau, Robert. Recherches sur la structure électromagnétique des discontinuités de l'atmosphère. p. 289–304.
- Gibault, G. Relation entre la transparence horizontale de l'atmosphère et la conductibilité de l'air au Val-Joyeux (Seine-et-Oise). p. 305–306.
- Hanzlik, Stanislas. À propos de l'unification des modes d'observation, de mesure et de notation des précipitations atmosphériques. p. 315–319.
- Mézin. Une méthode graphique pour le calcul des altitudes par la formule de Laplace dans le dépouillement des diagrammes des ballons-sondes. p. 312–314.
- Nature. London. v. 120. 1927.
- Hulbert, E. O. Ionisation in the upper atmosphere. p. 187. (Aug. 6.)
- Shaw, Napier. Meteorology: ancient and modern. p. 190. (Aug. 6.)
- Appleton, E. V. The existence of more than one ionised layer in the upper atmosphere. p. 330. (Sept. 3.)
- Störmer, Carl. An effect of sunlight on the altitude of aurora rays. p. 329–330. (Sept. 3.)
- Dines, J. S. Water-spouts and tornadoes. p. 515. (Oct. 8.)
- Nature. Paris. 1927.
- M., R. L'histoire et les facteurs cosmiques. p. 174. (15 août.) [Views of A. Tchijevsky.]
- Boutaric, A. Rayons cosmiques. p. 306–308. (1 octobre.)
- Nature magazine. Washington, D. C. v. 10. October, 1927.
- Talman, Charles Fitzhugh. The air of the forest. p. 245–248.
- Naturwissenschaften. Berlin. 15. Jahrgang. 20 September, 1927.
- Ficker, H. v. Sintfluthypothesen. p. 808. [Abstract.]
- Knoche, W. Der Austrocknungswert in seiner Beziehung zum Menschen. p. 808. [Abstract.]
- Norske videnskaps-akademi. Geofysiske publikasjoner. Oslo. v. 5. 1927.
- Köhler, Hilding. On water in the clouds. (no. 1.)
- Störmer, Carl. Photogrammetrische Bestimmung der Höhe von irisierenden Wolken (Perlmuttwolken) am 30. Dezember 1926. (no. 2.)
- Physical review. Minneapolis. v. 30. October, 1927.
- Cummings, N. W., & Richardson, Burt. Evaporation from lakes. p. 527–534. [Abstract.]
- Popular mechanics magazine. Chicago. v. 48. November, 1927.
- What you can believe about weather lore. p. 733–735.
- Royal aeronautical society. Journal. London. v. 30. June, 1920.
- Cooch, H. Landing aircraft in fog. p. 365–393.

- Royal astronomical society of Canada. Journal. Toronto. v. 21. September, 1927.*
- DeLury, Ralph E. The eleven year period in sunspots apparently reflected in the annual growths of a pre-glacial spruce. p. 274-276.
- Douglass, A. E. Solar records in tree growth. p. 277-280.
- Royal meteorological society. Memoirs. London. v. 1.*
- Walker, Gilbert T. On periodicity and its existence in European weather. (no. 9.)
- Brooks, C. E. P. The mean cloudiness over the earth. (no. 10.)
- Royal meteorological society. Quarterly journal. London. v. 53. July, 1927.*
- Belasco, J. E. The effect of atmospheric pressure on the readings of thermometers. p. 211-212.
- Bilham, E. G. On the calibration of pressure tube anemometers. p. 315-316.
- Cave, C. J. P. Climate. Broadcast talk no. 5. p. 310-312.
- Clark, J. Edmund, & others. Report on the phenological observations in the British Isles from December, 1925, to November, 1926. p. 241-293.
- Dines, J. S. Forecasting. Broadcast talk no. 6. p. 312-314.
- Hoare, Sir Samuel. Flight to India of the secretary of state for air. p. 233-240.
- Hobbs, W. H. The glacial anticyclones. p. 316-317.
- Margary, Ivan D. Weather observations at Wrentham, Suffolk, 1673 and 1674. p. 301-308.
- Meteorological studies in connection with the Toronto meeting of the British association. p. 295-300.
- Pick, W. H., & Farquharson, J. S. Ground day visibility at Cranwell, Lincs., in relation to the type of air. p. 293-294. [Abstract.]
- Simpson, G. C. Past climates. p. 213-232.
- Taylor, G. I. Turbulence. p. 201-211.
- Royal society of London. Proceedings. London. ser. A. v. 116. 1927.*
- McLennan, J. C., & others. The luminescence of solid nitrogen under cathode ray bombardment. p. 1-15. (Sept.) [Study bearing on the nature of the aurora.]
- Hill, Leonard. Measurement of the biologically active ultra-violet rays of sunlight. p. 268-277. (Oct.)
- Scientific monthly. New York. v. 25. October, 1927.*
- Fletcher, Edgar H. Climatic features of Yellowstone national park. p. 329-336.
- Fowle, F. E. The sun's heat. p. 370-375.
- The photoelectric cell and its application to the measurement of daylight. p. 383-384.
- Townsend, Charles W. Deserts and semi-deserts. p. 306-313.
- Smithsonian institution. Annual report. Washington, D. C. 1926.*
- Abbot, C. G. Influences of sun rays on plants and animals. p. 161-173.
- Austin, L. W. The present status of radio atmospheric disturbances. p. 203-208. [Repr. J. Wash. acad. sci.]
- Barbour, George B. The loess of China. p. 279-296.
- Millikan, R. A. High frequency rays of cosmic origin. p. 193-201. [Repr. Proc. nat. acad. sci.]
- Sverdrup, H. U. Scientific work of the "Maud" expedition, 1922-1925. p. 219-233. [Repr. Scientific monthly.]
- Société d'océanographie de France. Bulletin. Paris. 7. année. 1927.*
- Arago. Comment une houle peut se trouver masquée par une autre, même moins importante, au point d'échapper complètement à l'observation. p. 699-702. (15 juillet); p. 712-715. (15 septembre.)
- Mémery, Henri. Les problèmes actuels de la météorologie. p. 705-707. (15 septembre.)
- Tycos-Rochester. Rochester, N. Y. v. 17. October, 1927.*
- Beals, E. A. Ancient weather predictions. p. 156.
- Blair, Thomas Arthur. The oceans and the weather. p. 125-126.
- Eshleman, Cyrus H. Where to hang your thermometers. p. 127.
- Flora, S. D. Giant dust whirls of the semiarid west. p. 156.
- Hall, Bertram E. The river vs. the thunderstorm. p. 144-145.
- A hero of the air. p. 154-155.
- Rideout, E. B. Why many heat waves increase as they move eastward over the United States. p. 146-148.
- Thomas, B. A. Climate and culture. p. 140-141.
- Toy prophets of storm and sunshine. p. 154.
- Wilson, Wilford H. Charles Tracy p. 138-139.
- U. S. Department of agriculture. Washington, D. C. Yearbook. 1926.*
- Day, P. C. Drought and its effect in the United States. p. 314-316.
- Hawkins, Ion A. Orange freezing a hazard in all U. S. groves. p. 559-560.
- Kincer, J. B. Frost forecasting indispensable in orchard heating. p. 382-383.
- Valgren, V. N. Insurance against fire and storms. p. 454-456.
- Veitch, F. P., & Frey, R. W. Leather damaged by impure air. p. 483-486.
- U. S. Bureau of foreign and domestic commerce. Commerce reports. Washington, D. C. September 26, 1927.*
- Chapman, Emmett A. India seems assured of another satisfactory monsoon. p. 773. [With charts.]
- Wetter. Berlin. 44. Jahrgang. September 1927.*
- Groissmayr, F. Temperaturprognose: Januar Südgrönland. p. 205-206.
- Grosse. Die Mittel und Extreme der meteorologischen Elemente. p. 206-211.
- Heidke, P. Zur Berechnung des Erfolges und der Güte der Wetterdienstvorhersagen. p. 193-196.
- Holtzhey, D. R. Einige auffallende meteorologische Beobachtungen vom Bodensee. p. 214-215.
- Kreuder, A. Beugungsfarben an Schäfchenwolken. p. 213-214.
- Malsch, W. Mittlere Wolkenhöhen über Karlsruhe. p. 196-201.
- Peppler, W. Beobachtung eines braunroten, durchsichtigen Streifens zwischen zwei Dunstschichten. p. 211.
- Peppler, W. Eine Beobachtung über die Beziehung zwischen Stratus und Kumulus. p. 215.
- Peppler, W. Fall einer raschen Sichtverschlechterung. p. 212-213.
- Peppler, W. Hinderniswolken am Säntisgipfel. p. 212.
- Peppler, W. Hohe Pilotballonaufstiege an der Drachenstation am Bodensee. p. 201-203.
- Zeitschrift für Geophysik. Braunschweig. 1. Jahrgang. 1924/25.*
- Milch, W. Über den Einfluss grösserer Teilchen in der Atmosphäre auf das Polarisationsverhältnis des Himmelslichtes. p. 109-117. (H. 3.)
- Benndorf, H. Über die nächsten Aufgaben luftelektrischer Forschung. p. 147-152. (H. 4.)
- Stäger, A. Elektrische Erscheinungen im Zusammenhang mit vulkanischen Ausbrüchen. p. 209-213. (H. 5.)
- Hoelper, Otto. Über die Durchlässigkeit der Atmosphäre für die Sonnenstrahlung. p. 251-260. (H. 6.)
- Angenheister, G. Die Laufzeit des Schalls für grosse Entfernung. p. 314-327. (H. 7); p. 88-91. (2. Jahrgang. 1926. H. 2/3.)
- Schmidt, Adolf. Zur Frage der elektrischen Vertikalströme. p. 281-284. (H. 7.)
- Wegener, Alfred. Die äussere Hörbarkeitszone. p. 297-314. (H. 7.)
- Rudolph, H. Polarlicht und Luftelektrizität. p. 342-347. (H. 8.)
- Zeitschrift für Geophysik. Braunschweig. 2. Jahrgang. 1926.*
- Meinardus, W. Temperatur, Luftdruck und Wasserhaushalt in der Antarktis. p. 38-39. (H. 1.)
- Gutenberg, B. Die Schallgeschwindigkeit in den untersten Schichten der Atmosphäre. p. 101-106. (H. 2/3.)
- Meyer, Rudolf. Die Erklärung der äusseren Hörbarkeitszone. p. 78-87. (H. 2/3.)
- Mügge, R. Eine Berechnung des horizontalen Wärmeausstaches in der Atmosphäre mit Hilfe der Stratosphären-temperatur. p. 63-69. (H. 2/3.)
- Wiechert, E. Die anomale Schallausbreitung als Mittel der Erforschung der Stratosphäre. p. 92-101. (H. 2/3.)
- Büttner, K. Die durchdringende Höhenstrahlung. (Hessche Strahlung). p. 153-159. (H. 4.)
- Büttner, Konrad. Versuche über die durchdringende Strahlung. p. 187-191. (H. 5.); p. 254-256. (H. 6.); p. 291-293. (H. 7.)
- Kölzer, Joseph. Über den gegenwärtigen Stand der Frage der Schallausbreitung in der Atmosphäre. p. 229-236. (H. 6.)
- Meyer, Rudolf. Ist die Hörbarekeitszone durch Überschallgeschwindigkeit der Welle in der Stratosphäre zu erklären? p. 236-242. (H. 6.)
- Gutenberg, B. Die Entstehung der anomalen Schallzonen bei Explosionen. p. 260-266. (H. 7.)
- Hoelper, Otto. Über das ultraviolette Ende des Sonnenspektrums. p. 337-338. (H. 8.)

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Milch, W. Über die Extinktion der langwelligen und der kurzwelligen Sonnenstrahlung in der Atmosphäre. p. 334-337. (H. 8.)

Perlewitz, Paul. Die Bedeutung der Windforschung für Überseeuftverkehr und Luftfahrzeugindustrie. p. 338-341. (H. 8.)

Weickmann, L. Über Symmetriepunkte im Luftdruckgang. p. 332-334. (H. 8.)

*Zeitschrift für Geophysik*—Continued.

Wigand, A. Ladungsmessungen an natürlichem Nebel. p. 331. (H. 8.)

*Zeitschrift für Instrumentenkunde*. Berlin. 47. Jahrgang. September 1927.

Keil, W. Die Entwicklung der Firma J. & A. Bosch-Strassburg, ein Beitrag zur Geschichte der deutschen Präzisionsmechanik. p. 440-447.

## SOLAR OBSERVATIONS

## SOLAR AND SKY RADIATION MEASUREMENTS DURING SEPTEMBER, 1927

By HERBERT H. KIMNALL, Solar Radiation Investigations

For a description of instruments and exposures and an account of the method of obtaining and reducing the measurements, the reader is referred to the REVIEW for January, 1924, 52: 42, January, 1925, 53: 29, and July, 1925, 53: 318.

Table 1 shows that solar radiation intensities were above the normal values for September at Washington, D. C., and Madison, Wis., and close to normal at Lincoln, Nebr. At the latter station a noon intensity on the 20th of 1.48 gram-calories per minute  $\text{cm}^2$  equals the previous maximum intensity obtained at that station in September.

Table 2 shows an excess at Washington and Lincoln in the total solar radiation received on a horizontal surface directly from the sun and diffusely from the sky, and a deficiency at Madison, as compared with the September normals for these stations.

Skylight polarization measurements at Washington made on six days give a mean of 53 per cent, with a maximum of 60 per cent on the 12th. At Madison measurements on three days give a mean of 69 per cent with a maximum of 73 per cent on the 23d. These are close to normal values for September at Madison and considerably below at Washington.

TABLE 1.—*Solar radiation intensities during September, 1927*

[Gram-calories per minute per square centimeter of normal surface]

## Washington, D. C.

Date	Sun's zenith distance									
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°
	75th mer. time	Air mass								
e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.
Sept. 6.....	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.
Sept. 6.....	11.81	0.80	0.84	0.96	1.10	1.27	1.00	0.87	0.74	10.21
Sept. 12.....	9.83	0.87	0.94	1.00	1.20	1.47	1.20	1.05	0.93	9.14
Sept. 20.....	8.48	0.69	0.82	1.00	1.15	1.37	—	—	—	7.04
Sept. 22.....	6.50	—	—	—	—	—	—	—	—	7.29
Sept. 23.....	6.76	—	—	—	—	—	—	—	—	5.56
Sept. 24.....	7.29	—	—	—	—	—	—	—	—	5.79
Sept. 27.....	10.21	—	—	—	—	—	—	—	—	10.97
Means.....	0.79	0.84	0.94	1.13	1.37	(1.10)	(0.96)	(0.84)	(0.86)	—
Departures....	+0.09	+0.09	+0.07	+0.09	+0.05	+0.05	+0.11	+0.11	+0.19	—

## Madison, Wis.

Sept. 3.....	11.38	—	—	1.10	1.25	1.45	—	—	—	9.47
Sept. 14.....	16.20	—	—	—	—	—	—	—	—	16.20
Sept. 19.....	5.36	—	—	1.12	1.30	—	—	—	—	4.95
Sept. 21.....	6.27	—	—	1.14	—	—	—	—	—	6.50
Sept. 23.....	6.02	—	—	—	1.20	—	1.25	1.06	—	6.27
Means.....	—	—	—	1.12	1.19	(1.45)	(1.25)	(1.06)	—	—
Departures....	—	—	—	+0.09	+0.02	+0.07	+0.09	+0.05	—	—

TABLE 1.—*Solar radiation intensities during September, 1927*—Con.

Lincoln, Nebr.

Date	Sun's zenith distance										Local mean solar
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
	75th mer. time	Air mass									
e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.	
Sept. 2.....	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.
Sept. 3.....	16.20	—	—	—	—	—	—	—	—	—	12.24
Sept. 4.....	15.65	—	—	—	—	—	—	—	—	—	12.24
Sept. 5.....	16.79	—	—	—	—	—	—	—	—	—	15.65
Sept. 8.....	17.37	—	—	—	—	—	—	—	—	—	17.98
Sept. 9.....	17.37	—	—	—	—	—	—	—	—	—	16.70
Sept. 10.....	15.11	0.65	1.77	0.92	1.12	1.32	1.11	0.95	0.82	0.68	14.10
Sept. 12.....	14.10	—	—	—	—	—	—	—	—	—	13.13
Sept. 13.....	15.65	—	—	—	—	—	—	—	—	—	14.10
Sept. 14.....	15.11	—	—	—	—	—	—	—	—	—	16.20
Sept. 16.....	18.59	—	—	—	—	—	—	—	—	—	17.37
Sept. 17.....	16.20	—	—	—	—	—	—	—	—	—	14.10
Sept. 20.....	4.95	—	—	—	—	—	—	—	—	—	3.83
Sept. 21.....	4.95	—	—	—	—	—	—	—	—	—	3.81
Sept. 22.....	5.79	—	—	—	—	—	—	—	—	—	5.16
Sept. 23.....	6.76	—	—	—	—	—	—	—	—	—	6.50
Means.....	(0.65)	0.87	0.99	1.21	1.39	1.66	1.16	0.97	0.82	0.74	—
Departures....	-0.10	+0.00	-0.02	+0.02	+0.01	+0.01	-0.01	-0.01	+0.01	+0.01	—

\*Extrapolated.

TABLE 2.—*Solar and sky radiation received on a horizontal surface*

[Gram-calories per square centimeter of horizontal surface]

Week beginning	Average daily radiation						Average daily departure from normal	
	Wash- ington	Madis- son	Lin- coln	Chi- cago	New York	Twin Falls		
1927								
Sept. 3.....	cal.	cal.	cal.	cal.	cal.	cal.	cal.	
Sept. 10.....	400	346	470	347	390	499	+15	
Sept. 17.....	362	351	458	328	322	484	-11	
Sept. 24.....	367	356	480	273	276	503	+12	
Deficiency since first of year on Sept. 30.....	—	—	—	—	—	328	+42	
							-150	
							-182	
							-8,484	
							-4,361	
							-7,049	

## POSITIONS AND AREAS OF SUN SPOTS

[Communicated by Capt. C. S. Freeman, Superintendent U. S. Naval Observatory]  
[Data furnished by Naval Observatory, in cooperation with Harvard, Yerkes, and Mount Wilson observatories]

Date	Eastern standard civil time	Heliographic		Area <sup>1</sup>	
		Longitude	Latitude	Spot	Group
1927					
Sept. 1 (Yerkes).....	9 59	—	—	—	—
		—53.0	—18.0	200	—
		—45.0	—12.0	150	—
		—10.0	—15.0	—	100
		+48.0	—16.0	100	—
		+53.0	—17.0	100	—
		—38.0	—16.5	—	108
		—31.5	—14.5	—	93
		+3.5	—17.0	—	123
		+67.0	—17.5	—	278
Sept. 2 (Naval Observatory).....	11 31	—	—	—	—
		—25.0	—16.5	108	—
		—17.5	—14.5	77	—
		+16.0	—17.5	—	123
Sept. 3 (Naval Observatory).....	11 38	—	—	—	—
		—25.0	—16.5	108	—
		—17.5	—14.5	77	—
		+16.0	—17.5	—	123

<sup>1</sup> Areas are corrected for foreshortening and are expressed in millionths of Sun's visible hemisphere.